

Review Report II

The Pollino 2012 seismic sequence: clues from continuous radon monitoring

by A. Piersanti, V. Cannelli, and G. Galli.

Comments by Páll Einarsson

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General Remarks:

The paper presents results from a radon monitoring project in Italy, a timeseries of radon activity before, during and after a nearby earthquake sequence. Several methods are used to analyse the data and quantify the relationship between radon activity, environmental parameters, and seismicity. This is an unusually thorough analysis and appears to be based on solid methodology. The conclusions appear to be sound, they are carefully stated and supported by the data analysis. In my opinion the paper represents a significant contribution to the studies of earthquake source processes and the failure preparation phase. It should be of considerable interest to the readership of Solid Earth.

I reviewed an earlier version of this paper. The authors have already responded to my earlier remarks in a satisfactory manner.

Reviewer Comments:

1. More technical information is needed. I cannot find any information about the sampling technique. There is no mention of what the carrier fluid is, atmospheric air, ground water, geothermal fluid, geothermal gas? What is the depth of sampling, surface, soil, drill hole? This is particularly important in the light of the strong correlation of radon concentration with meteorological factors, (see e.g. page 6, lines 5-6). This correlation is understandable if the sampling takes place at the surface. It may be possible to reduce the disturbing influence of weather by taking samples from deep drill holes (Hauksson and Goddard, 1981, Einarsson et al., 2008). (I note the words „soil radon emanation“ appear on page 8, line 33, and page 9, line 19-20 and 29).

2. I recommend publication of this manuscript, but after minor revisions.

Specific comments:

1. Strange sentence: Page 2, lines 12-13.
2. Strange sentence: Page 2, lines 22-23.
3. Page 8, line 3: ... other than the trivial one ...
4. Page 9, line 32: Complicated sentence. Delete „nevertheless“.